

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE SECRETARY OF THE COMMISSION

In the Matter of)	
Florida Power and Light, Inc;)	Docket No. Turkey Point 52-040
Application for the Turkey Point)	and 52-041-COL
Nuclear Power Plant Units 6 & 7)	
Combined Operating License)	

EXPERT DECLARATION BY DR. PHILIP K. STODDARD IN SUPPORT OF
PETITIONER’S STANDING TO INTERVENE IN THIS PROCEEDING

Under penalty of Perjury, I, Philip K. Stoddard, Ph.D. Mayor of South Miami

A. EDUCATION, RESEARCH, AND PROFESSIONAL WORK EXPERIENCE

1. **Name** – My name is Philip K. Stoddard. I am the elected Mayor of the City of South Miami, Florida, and a Professor in the Department of Biological Sciences at Florida International University. My business address is City of South Miami, 6130 Sunset Drive, South Miami, FL, 33143.

2. **Advanced degrees** – I received a Bachelor of Arts degree in Biology (1979) from Swarthmore College, a doctoral degree in Psychology (1989) from the University of Washington.

3. **Research focus** - My research is on ecology, neurobiology, and biophysics of bioelectric communication. In addition, I was co-founder of the not-for-profit citizen / scientist organization Citizens Allied for Safe Energy (CASE).

4. **Teaching experience** – At Florida International University I teach undergraduate courses in zoology and graduate courses in research methods and data analysis.

5. **Research grants** – I have received major research grants from the National Institutes of Health and the National Science Foundation to study bioelectric signals and communication.

6. **Published literature** – I read broadly and I am familiar with the literature on effects of magnetic fields on cancer and public health, on the epidemiology of residents near high voltage transmission lines, and on public health following the Three Mile Island accident. I have published over 50 peer-reviewed papers in the scientific literature on animal communication, physiology, and biophysics. My publications are listed in my CV (Stoddard Exhibit A).

B. INADEQUATE PUBLIC SAFETY PLAN IN THE PROPOSED TURKEY POINT 6&7 COL APPLICATION

B.1 Statement of issue

7. Emergency plans – The emergency plan on file with Miami-Dade County, upon which TPN Units 6 & 7 COL Application relies does not adequately assure protection of public health and safety in the event of a radiation release during a General Emergency.

B.1 Explanation of basis

8. Addressing the risks to public health & safety posed by the current emergency plan – The NRC Regulations 10(CFR) § 50.47 requires that no initial operating license for a nuclear power reactor will be issued by the NRC unless adequate safety measures can and will be undertaken pending a radiological emergency. A contention is filed in this petition showing adequate safety measures cannot be undertaken pending a radiological emergency.

B.1 Statement of facts and opinions supporting the dispute and deficiencies within the scope of this proceeding

9. Analysis of flaws in the existing emergency plan – Because of the frequency of hurricanes in South Florida, and because of my position as Mayor of South Miami, I have familiarized myself with emergency procedures, emergency shelters, and local evacuation routes. I have familiarized myself with the World Health Organization reports on radiological emergencies. I have analyzed the radiological emergency plans in place within Miami-Dade County.

10. Examples of specific inadequacies in current emergency plan – The emergency plan cannot be implemented to protect public health and safety in the event of a radiological emergency. Should radiation be released into the environment, the plan would not protect large number of people from exposure to airborne radioisotopes.

Orderly evacuation cannot be carried out in a timely manner

Should radiation be released into the environment, residents cannot be evacuated in sufficient time to protect them from radiological exposure. Nor do the plans take into account complication posed by the large number of people outside the evacuation area who would chose to evacuate by car.

Evacuation facilities are inadequate

The emergency facilities designated to receive evacuees cannot hold even 2% of those living in the 10-mile radius circle surrounding Turkey Point nuclear facility who would be subject to mandatory evacuation.

Potassium iodide distribution plan cannot reach people before exposure

The current plan for treatment with potassium iodide cannot reach evacuees or stay-at-home residents before they are exposed to radiation, and therefore will not provide sufficient protection from thyroid cancer.

Enhanced risk means enhanced urgency to get this right

The reactor design for Units 6 & 7 has features that make it more likely to leak radiation into the environment than designs currently in operation, making the inadequacy of the emergency plan all the more serious a threat to public safety and welfare.

C GRANTING A COMBINED LICENSE (COL) TO FLORIDA POWER AND LIGHT CO. (FPL) TO CONSTRUCT AND OPERATE PROPOSED TURKEY POINT UNITS 6 AND 7 WOULD RESULT IN THREATS TO PUBLIC SAFETY

C.1. Statement of issue

11. Residents of 10 mile EPZ cannot be evacuate in sufficient time to prevent exposure to airborne radiation in the event of a radiological release.

C.2. Explanation of basis

12. Wind-borne radiation can cover the area before people have sufficient time to evacuate. The County estimates that 17 hours would be required to evacuate coastal regions in advance of a hurricane. But a radiation cloud could cover the 10-mile EPZ in less than two hours under normal wind condition, and in 20 minutes under windy conditions. None of the estimates have taken into account how the three main roads would be congested if residents attempted to escape sooner, or if significant numbers of people outside the mandatory evacuation area attempted to escape, as occurred during the Three Mile Island accident.

D.1. Statement of issue

13. Evacuation screening and shelter provisions of Miami-Dade County are inadequate to hold mandatory evacuees.

D.2. Explanation of basis

14. Over 100,000 people live within 10 miles of Turkey Point, but the Tamiami Emergency Reception Center (ERC) has capacity for less than 2000. The County plans for people downwind of a radiological release to be transported to Tamiami Park, a 20 mile drive up Florida's Turnpike. The pavilion at the park has a stated capacity of 1000 people, and is estimated to hold 1450 people.

E.1. Statement of issue

15. Potassium iodide prophylaxis for radioiodine release cannot be administered to people in sufficient time to protect them

E.2. Explanation of basis

16. Potassium iodide, given to people before exposure to radioisotopes of iodine, released in a general emergency at a nuclear facility, is protective against thyroid cancer. NOTE, the potassium iodide should be taken BEFORE exposure to radioiodine vapors. Potassium iodide is stored adjacent to the Tamiami ERC, thus cannot be administered until people arrive there. Wind conditions, traffic, and the sheer number

of people needing potassium iodide would preclude treatment of most people prior to exposure to windborne radiation.

F.1. Statement of issue

17. Reactor design proposed by FPL for TPN Units 6 & 7 has potential for corrosion leaks and venting of radiation into the environment

F.2. Explanation of basis

18. Nuclear engineer Arnie Gunderson has filed a report [Exhibit-Gundersen Declaration Filed 08-13-10 Vogtle COL] indicating elevated risk of corrosion, and a chimney design that would vent leaked radiation directly into the environment. According to Gunderson's analysis, the steel containment shell of the AP 1000 has a high potential for through-hole corrosion, and cannot be visually inspected for corrosion. Further the surrounding containment has a hole that would create a chimney effect, venting any leaked radiation directly into the environment, rather than containing it as is case with reactor designs currently in service. Thus, the reactor design is more likely to leak radiation than existing designs, increasing the importance of emergency procedures adequate to protect the public.

D. SUMMARY

19. The Miami-Dade County emergency plan for protecting the public in the event of accidental radiation release from TPN Units 6 & 7 does not meet the mandate of NRC Regulations 10(CFR) § 50.47. (i) The plan cannot evacuate people with sufficient speed, (ii) the emergency receiving center cannot hold sufficient numbers of evacuees, (iii) the plan for distributing prophylactic potassium iodide cannot reach the majority of people prior to exposure, and (iv) the reactor design is considered more prone to radiation release than prior designs, elevating all these concerns.

I declare, under penalty of perjury, that the factual statements above are true and correct, to the best of my knowledge, and the expression of opinion stated above are based on my best professional judgment.



Philip K. Stoddard, Ph.D.
Mayor of South Miami